

**PSYCHOSOCIAL ADJUSTMENT OF  
OBESE CHINESE ADOLESCENT  
GIRLS IN HONG KONG**

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## **Abstract**

This study examined the psychological characteristics of obese Chinese adolescent girls as compared with their normal weight counterparts. A sample of 1155 secondary school girls aged between 11 and 19 completed a survey examining their history of weight-related teasing, body dissatisfaction, self-esteem, general psychological functioning and eating behaviour. A subgroup of 91 obese girls and 149 overweight girls were identified from the sample. Findings revealed that overweight girls were teased significantly more for their heaviness in the past and were less satisfied with their body appearance. They were not found to differ from average weight to underweight girls in self-esteem, depression, academic achievement, family and social relations. More disordered eating behaviours were found in the obese group. The structural model being tested confirmed the prediction that higher BMI was not a direct cause of poorer psychological functioning, but its effects were mediated by weight-related teasing and dissatisfaction with body appearance on self-esteem and depression. In addition, teasing history was found to contribute directly to negative mood. These findings helped us understand the psychological functioning of the group of adolescent girls who were significantly heavier than the others. Results were discussed in comparison with previous research, highlighting the limitations of present study and its implication for related research in the future.

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# Chapter 1

## Introduction

Obesity has been a growing health concern especially among children, adolescents and young adults in developed countries. It has long been suggested to be related to diabetes mellitus, hypertension, cardiocascular diseases, sleep apnea and several types of cancer in males and females (Pi-Sunyer, 1991). Those who are overweight in adolescence are more likely to be overweight in adulthood (Brownell & Wadden, 1992). While many in the modern society increasingly embrace the notion of being thin as beautiful, being severely obese is especially likely to be considered unattractive or even grotesque. It has been found that obese persons are subjected to more discrimination in the United States (Wadden & Stunkard, 1985), where thinness and weight control has become highly valued. In Hong Kong, Chinese adolescent girls have been found to have lower body weight for height and lower prevalence of obesity (Leung, 1994). Chinese culture traditionally valued slimness less than recent Western cultural trends and overweight Chinese girls are also thought to be less susceptible to negative consequences related to control over body weight and shape. However, body weight of Chinese adolescents in Hong Kong have increased over the past 20 years (Leung, 1994). In the face of growing acceptance of slimness as an ideal for attractiveness and dislike for obesity especially among women, it is therefore of interest to explore in Hong Kong if overweight Chinese adolescent girls' psychological and social functioning would differ from normal weight girls.

### Obesity and psychopathology

Earlier studies viewed emotional and personality disturbances as causes of



obesity. Obesity has been hypothesized to be caused by excessive eating as a means of dealing with difficulties in interpersonal relationships, unconscious conflicts or negative emotions. It has also been suggested that there was a "jolly" obese personality type that suffers from feelings of inferiority and passivity (Foster & Wadden, 1994). However, the hypothesized relations between obesity and anxiety and depression have repeatedly been reputed. Wadden and Stunkard (1985) found that the levels of anxiety and depression between obese and non-obese individuals were either too small to be significantly different in a clinical sense or observed to be even lower for the overweight person in a number of studies. A meta-analysis of studies on obesity and psychopathology also found "no relationship between obesity and depression or anxiety" (Friedman & Brownell, 1995). In a review of studies on the psychological consequences of weight loss treatment, Wing and her colleagues (Wing, Epstein, Marcus and Kupfer, 1984) found that rather than overeating to cope with emotional difficulties, obese people tended to improve on measures of depression and anxiety after going through treatment for weight loss. This improvement indicates the reactive nature of general psychopathology for obese individuals. Wadden and Stunkard (1985) found a consistent mild elevation on the MMPI Depression scale (T score of 1 standard deviation above the mean) and they also found elevations on hypochondriasis, hysteria and impulsivity among obese persons treated for obesity. They pointed out that a similar pattern of disturbance at comparable degree of severity was also found for patients of identical age seeking other medical and surgical treatment. Research has failed to identify consistent personality traits for obese individuals, and instead found much heterogeneity in personality traits among this weight group (Foster & Wadden, 1994; O'Neil &

Jarrell, 1992).

Others have suggested that some individuals are negatively reinforced to overeat in order to reduce emotional stress, and overeating is a habit that can be corrected by using behavioural therapy principles. However, the effectiveness of behavioural treatment and its effect on reducing depression has not received consistent support from empirical studies (Foster & Wadden, 1994). In sum, the notion that obesity in general is caused by negative emotions is not supported.

On the other hand, recent research indicated that there are a number of causes to obesity. Obesity was found to be highly inheritable according to adoption and twin studies, related to individual body metabolism (Stunkard & Wadden, 1993), and socioeconomic status (Sobal & Stunkard, 1989).

Other studies on the psychological functioning of obese individuals suggested that emotional disturbances are more likely to be caused by obesity rather than be the cause of such (Wadden & Stunkard, 1985). Obese persons are found to be subjected to discrimination by others. In a 7-year prospective study, Gortmaker, Must, Perrin, Sobol and Dietz (1993) found that obesity in the United States was associated with lower likelihood of getting married for males and females, lower household income, and years of education by young adulthood for females. Wadden and Stunkard (1985) found that children and adults alike rated the obese child as less likable than children with handicaps such as missing limbs and facial disfigurement. Obese individuals were described as "weak-willed, ugly, and awkward". Obese high school students had lower acceptance rates into prestigious universities than normal weight students despite having comparable academic performance. Researchers and physicians also found that obese individuals who



went through surgical treatment leading to massive weight loss reported lower levels of anxiety and depression, increased physical mobility, lower self-consciousness, greater participation in social activities, greater occupation satisfaction, and higher self-confidence and self-esteem (Wadden & Stunkard, 1985; Stunkard & Wadden, 1992).

### Body image dissatisfaction

While being obese is not related to general psychopathology, obese individuals are more likely to be dissatisfied with their weight and physical appearance given the negative evaluations that they receive for their weight. Body image dissatisfaction is not unique to obese persons who are heavier than most other people.

Dissatisfaction with weight and body shape has in fact been called the “normative discontent” of women (Wadden, Foster, Stunkard & Linowitz, 1989). In a survey, Cash, Winstead and Janda (1986) found that while only 14% of the female respondents were categorized as overweight, over 50% of the respondents considered themselves overweight. Forty-seven percent of those who are of normal weight considered themselves overweight, and only 56% of those who are underweight considered their weight below normal. The overweight were even more dissatisfied than normal weight women. They were found to be much more likely to have negative body-image evaluations of their appearance (79 percent) than those who were of normal weight (25 percent) and those who were underweight (17 percent). A more recent replication of the survey (Gardner, 1997) found that 89% of the female respondents were dissatisfied with their bodies. The farther away from their desirable weight they were, the more dissatisfied they report themselves to be with their body appearance. According to the survey, 54% of the female



respondents aged between 13 to 19 reported body dissatisfaction.

Research has consistently found that obese persons have higher levels of body dissatisfaction than non-obese individuals (Friedman & Brownell, 1995). In a study of 393 obese and non-obese adolescent girls of average age 16, Wadden et al. (1989) found that obese girls did not report more depression and anxiety but greater dissatisfaction with their body weight and shape than their normal weight counterparts. On the other hand, those who perceived themselves as heavier than desirable not only reported greater body dissatisfaction, but also more depression and anxiety. Seventy percent of the girls had tried to lose weight over the past year. Obese females with childhood versus adult onset obesity were found to have no difference on the development of body image disturbance (Faubel, 1989). Although the relationship of body dissatisfaction and emotional disturbance has not been established for obese persons in the general population, it has been found in those who sought clinical treatment (Stunkard & Mendelson, 1967).

#### Obesity and adolescent development

Consistent with research on adults, there is a lack of relationship between obesity and psychopathology in childhood and adolescents (Epstein, Klein & Wisniewski, 1994). It was also found that there is no correlation between obesity and anxiety and depression for teenage girls (Wadden, Foster, Stunkard, Linowitz, 1989). The picture is less clear for correlation with self-esteem. It has been reported that there is no correlation with self-esteem for a group of teenage boys and girls (Wadden, Foster, Stunkard & Finley, 1984). There was no relation between self-esteem and childhood obesity in a study of black adolescents aged 9 to 18 (Kaplan & Wadden, 1986). It was found that childhood obesity is not caused by

adverse psychosocial factors including family factors. Childhood obesity in boys and girls was not found to be predicted by physical self-esteem or paternal perception of family functioning in a 3-year longitudinal study beginning from 3 to 6 years old (Klesges et al., 1992). However, a study of 550 14 to 16 year-old girls found that self-esteem is related to weight (Martin, Housley, McCoy, Greenhouse et al., 1988), with underweight and normal weight subjects tended to have higher self-esteem than obese subjects. Another study found that relative weight was the best predictor of body-esteem in adolescents 9 to 17 years of age (Mendelson & White, 1985). Irrespective of their weight, older adolescents aged 12 to 17 showed greater tendency to have low self-esteem related to low body-esteem than younger girls, reflecting the increasing impact of body dissatisfaction on psychosocial functioning in adolescent development. The main problem with these studies was that the effect of age on the relations between weight status and self-esteem was not explored specifically. There is a possibility that the overall self-esteem of older girls is more likely to be influenced by their body-esteem.

Body dissatisfaction appears to be a strong predictor for negative mood and eating disturbances for adolescent girls. Leon, Fulkerson, Perry and Cudeck (1993) looked at risk factors for the development of eating disorders in 7th to 10th grade adolescent girls. They found that negative emotionality, low interoceptive awareness for emotional arousal and body dissatisfaction were the strongest predictors for risk of developing DSM-III-R eating disorders. A two-year longitudinal study for adolescents girls from age 14 to 16 also found that body image disturbance significantly predicts eating disturbance and depression (Attie & Brooks-Gunn, 1989).



### Negative evaluation, attribution and disturbances in psychological functioning.

It has been raised that a highly visible physical characteristic such as a physical deformity or a highly attractive appearance invites evaluation from our social environment during childhood and adolescence (Engfer, Walper & Rutter, 1994). Such an evaluation would in turn influence the individual's expectations on himself and his behaviour. The effect of the evaluation is in turn affected by the visibility (e.g. facial characteristic vs. personality trait), controllability (e.g. genetically vs. behaviourally determined) and social desirability (e.g. contagious vs. noncontagious diseases) of such a characteristic. Visible characteristics can be particularly salient in superficial contacts as attention would be channelled to such characteristic, eliciting social stereotypes prior to any social interaction. Visibility of the characteristic thus determines the quality of the interaction and in turn affects how the person feels about the interaction and themselves. The social significance of the characteristic might be particularly powerful during adolescence and early adulthood, when peer relationships and intimate relationships are particularly important. Obesity has been considered highly visible, as well as considered a behaviourally determined characteristic that could be remediated by self-control and behavioural treatment (Crandall, 1990, 1994). With thinness being more and more emphasized as aesthetically pleasing and associated with moral and personal achievement, the social undesirability of obesity is obvious.

Miller, Rothblum, Brand & Felicio (1995) found that obese persons were not judged to have poorer social relations than non-obese ones. It was suggested that obese persons in general have learned to maintain good social relations despite prevailing negative attitude towards obesity. However, negative evaluations of

significant others, parents, friends often lead to internalization of lower regard for body image in obese persons (Stunkard & Mendelson, 1967). It was speculated that for these people, levels of intelligence, talents and wealth would fail to make any difference to them. Weight would become their primary concern and the world would be perceived in terms of weight and body shape. Such perception would become embedded in the way one relates to other people at all times.

On the societal level, obese persons do not show more depressed mood compared to normal weight persons despite the fact that obese persons would encounter prejudice and discrimination from the society and from significant others. Using concepts from the attribution theory, Crocker, Cornwell and Major (1993) found overweight female subjects who received negative feedback from an evaluator were more likely than normal weight controls to attribute the negative feedback they received to their weight and not blame the evaluator. These subjects tended to show greater negative affect than normal weight controls after receiving evaluation. They were also more likely to attribute the feedback they received to their own appearance rather than their own personality, evaluator's personality and evaluator's concern with appearance. The results suggest that reaction towards the social stigma of obesity by attributing negative evaluation to prejudice and discrimination may help protect the person's mood and self-esteem. On the other hand, those who do not "externalize" the negative evaluations they received by attributing the stigma to prejudice and discrimination but blame themselves and their appearance would experience more negative mood and possibly have lower self-esteem with regard to their appearance.

On the other hand, the effects negative evaluation have on obese adolescent



girls were found to be important in a study on predictors of dieting and eating disturbances for 6th to 8th graders (Levine, Smolak, Moodey, Shuman & Hessen, 1994). Cues and messages adolescent girls received from peers and family members on weight, shape and dieting mediated the probability of developing nonpathological dieting and subclinical eating disturbance regardless of stage of puberty, dating status and perceived academic stress. However, this study failed to look at the effect of weight status on amount of comments from friends and family members and their relative effect. Mendelson, White and Schliecker (1995) found that obese girls reported lower cohesion, expressiveness and democratic family style, a trend found for underweight but not obese boys. This finding is consistent with the general societal preference for thinness in females which begins at an early age, expressed in the family perhaps as pressure for adolescent girls to lose weight.

Using a self-report measure for both history of teasing on weight and size and teasing for overall appearance since childhood, Thompson, Fabian, Moulton, Dunn and Altabe (1991) found that weight-related teasing correlated significantly with measures of body dissatisfaction, eating disturbances, depression and self-esteem in a sample of college women. Such correlations were not found for general appearance. In another study, weight-specific teasing was found to be a significant predictor of body dissatisfaction and eating disturbance (Thompson & Heinberg, 1993). Grilo, Wilfrey, Brownell and Rodin (1994) also reported correlations of weight/shape related teasing with body image and self-esteem in a clinical sample of obese adult women. Weight-specific teasing correlated positively with body dissatisfaction. They suggested that although self-esteem was not significantly related to teasing, it is closely associated with body image and is also likely to be

affected. Thompson, Coover, Richards, Johnson & Cattarin (1995) found that there is no direct effect of obesity on body dissatisfaction. Teasing influenced global psychological functioning such as depression, self-esteem as well as eating disturbances in their two-year follow-up study. Teasing reported at time one also predicted weight and appearance dissatisfaction at time two. Another study by Thompson, Cattarin, Fowler and Fisher (1995) also compared weight-specific teasing with competency teasing for their frequency and effect on a sample of college women. They found that both frequency and effect of weight-specific teasing significantly correlate with body dissatisfaction. Such correlations were nonsignificant for competency teasing frequency and weaker for competency teasing effect.

In another study of body image disturbance in college women (Stormer & Thompson, 1996), teasing was found to have a smaller variance in predicting body dissatisfaction than earlier studies (Thompson, 1993; Grilo et al., 1994) when more predictors such as maturation timing were included. The effect of such negative weight-related teasing on adolescent girls is yet to be established empirically.

#### Obesity among the youth in the local context

Compared to Western countries, it seems that Chinese youth are less likely to be obese and they tended to be less overweight. The prevalence of obesity among Chinese youth in Hong Kong has been studied in a community sample of form 4 and 5 local secondary school students. Using Body Mass Index cutoff at 25.0, 3.1% of girls and 1.6% of boys were found to be overweight, which is of lower prevalence than their Western counterparts (Ho & Donnan, 1986). These results have been replicated in a larger growth index study (Leung, 1994) which used the 97th



percentile as the cut-off point for classification of obesity. When the 90th percentile is used as cut-off, body mass index of approximately 22 or above would be considered overweight, compared to a mean cutoff at 28 used in a sample of Canadian adolescents (Leon et al., 1993) and 27.6 in a sample of American girls (Wadden et al., 1989). Over half of them embraced the attitude that having a slim body is very important for them. Indeed, physical appearance seemed to be very important for local teenagers. A study on the self-concept of Hong Kong youth found that self-regard for physical appearance significantly correlated with global self-concept, academic and social self-concept (Leung & Leung, 1992). In another study on Chinese adolescents in Hong Kong, most of the girls considered themselves overweight while more boys consider themselves underweight (Chan, 1995).

While being chubby in childhood has generally been considered healthy, a notion that was realistic in the days when food was scarce for many Chinese people, such an idea has gradually been eroding in Hong Kong as it has become increasingly westernized (Chan, 1995). It is doubted whether being chubby and slightly overweight is still considered as cute and attractive for local youngsters.

Overweight girls are especially vulnerable to body dissatisfaction among a peer group that has preference for thinness. In a study by Li (1994), when a cut-off of BMI = 22 is used to classify the subjects as overweight, 107 out of 1209 (8.9%) met the criteria. However, only 20 out of 1155 (1.73%) reported a desired BMI over 22. Most subjects indicated a BMI close to the sample mean of 18.77. Overweight subjects showed a greater tendency to endorse the attitude that if they are slimmer their self-worth would be higher and that they have a desire to lose weight and be thinner. It seems that just being plump is already sufficient for making some

adolescent girls dissatisfied with their bodies (Li, 1994).

We also need to consider whether overweight adolescent girls receive negative evaluation for their weight from their families and peers and how that affects their overall well-being. Studies on the stigma of physical illness found that the most important predictors of social rejection are personal control over the illness and behavioral cause for the illness, both of them likely to be associated with obesity (Crandall & Moriarty, 1995). The hypothesis that people might show contempt towards fatness and attribute personal weakness to obesity remains to be tested for adolescents in Hong Kong.

There has been an increase in the prevalence of eating disorders in Hong Kong (Lee, Ho & Hsu, 1993; Lee, 1992). It seems that the impact of increased exposure to Western culture leads to greater likelihood for Chinese young females to pursue thinness (Lee, 1991; Lee, Ho & Hsu, 1993). With weight control measures being increasingly popularized in Hong Kong and with obesity getting more prevalent among local adolescents (Leung, 1994), there is also a need to look at possible relations of obesity and eating disturbances.

#### Rationale of the present study

The present study examined the psychological adjustment of obese adolescent girls in a Chinese community. Previous research has indicated that body weight status and history of being teased for fatness contribute to negative evaluation of one's appearance, low self-esteem, and negative mood. This study specifically addressed the following research questions:

- 1) To investigate the general psychological functioning of obese girls as compared with girls who are not obese.



In order to investigate the psychosocial well-being of obese adolescent girls, subjects who participated in the study were divided into different weight groups based on their Body Mass Index (BMI). Comparison were mainly based on classification of the girls into two groups: obese and nonobese groups. The two groups were compared on measures of fear of fatness, anti-fat attitude, history and experience of being teased, body dissatisfaction, self-esteem and depression, eating disturbances (such as binge eating and frequencies of engaging in pathogenic weight loss behaviours), as well as other indicators of psychological functioning for adolescents including perceived family relations, social relations and academic achievement. It is hypothesized that obese girls as a group are no more depressed, and do not have lower self-esteem, perceived family and social functioning as well as perceived academic achievement. However, they are predicted to be teased more and to experience more distress from the teasing over the years. It is also predicted that obese girls who experience more teasing for fatness would report higher levels of body dissatisfaction, and eating disturbance than subjects of normal weight.

- 2) To find out the relationships among weight status, fear of fatness, history of being teased, indicators of body image and eating disturbances, and other general indicators of the psychological functioning.

The intercorrelations of measures on subjects' BMI, attitude towards fatness, experience with weight-related teasing, indicators of body image and eating disturbances together with indicators of general psychosocial

well-being were analyzed in the present study.

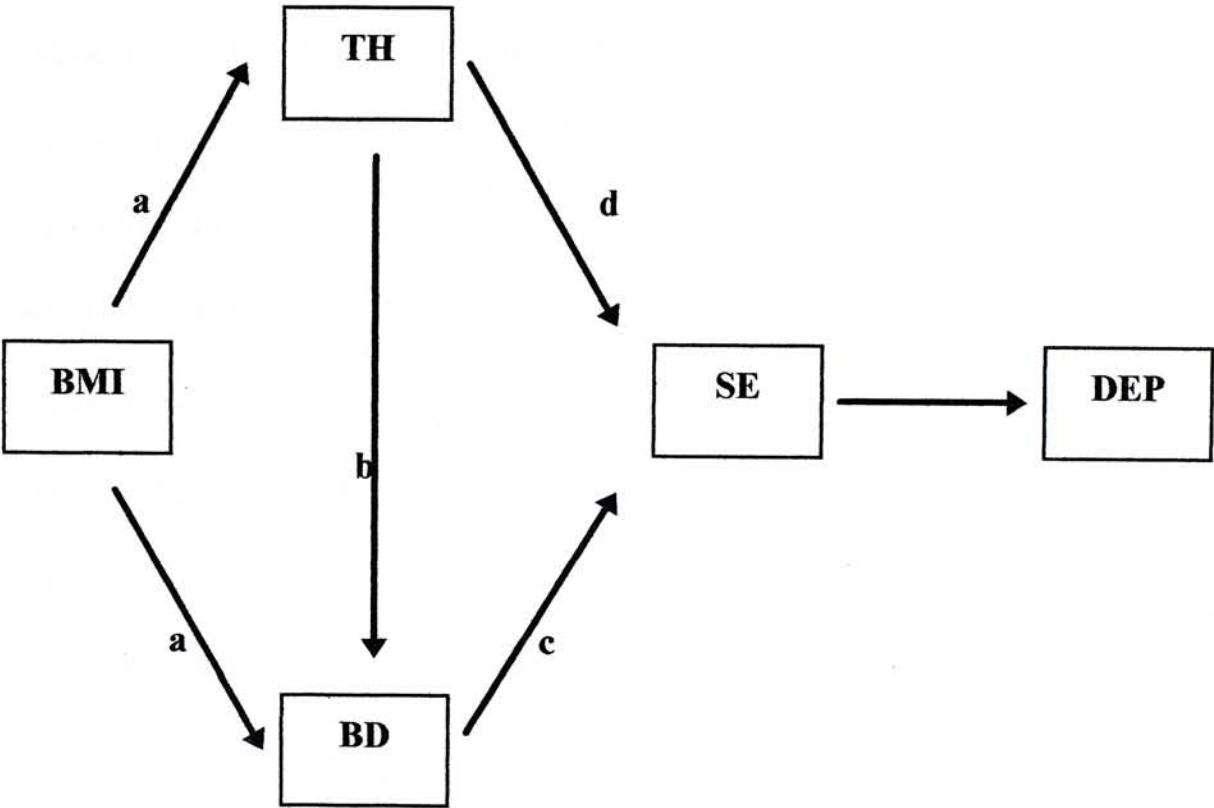
- 3) To test the 'causal' relations between weight, teasing history, body image disturbance, self-esteem and depression.

A path-analytic model was proposed in order to explain possible causal relationships among body mass (BMI), teasing history (TH), body dissatisfaction (BD), global self-esteem (SE) and depression (DEP). The basic model is presented in Figure 1. In general, the proposed model predicts that higher BMI contributes directly to more experience of teasing (TH) and higher body dissatisfaction (BD). Both TH and BD in turn would predispose these adolescent girls to lower self-esteem (SE) as well as depression (DEP). The following specific hypotheses were being tested:

- a) Body mass has a direct positive effect on teasing history, and indirect effects (mediated by teasing history and body dissatisfaction) on self-esteem. Body mass index also has both direct and indirect effects on body dissatisfaction (indirect effect mediated by teasing history).
- b) Teasing history has a direct effect on body dissatisfaction.
- c) Body dissatisfaction has a direct effect on self-esteem, and indirect effect on depression (mediated by self-esteem).
- d) Teasing history has both direct and indirect effects on self-esteem (indirect effect mediated by body dissatisfaction), and indirect effect on depression (mediated by self-esteem).

**Figure 1.**

Specific paths of possible causal relations between Body Mass Index, Teasing History, Body Dissatisfaction, Self-esteem and Depression.



*Note:* BMI = Body Mass Index; TH = Teasing History; BD = Body Dissatisfaction; SE = Self-esteem; DEP = Depression.



## Chapter 2

### Method

#### Subjects

Subjects were 1155 secondary school girls from form 1 to form 7 with an age range of 11 to 19 years old. The subjects came from schools that have been given consent to participate in the study. Most of the subjects came from band 1 or 2 schools (from a classification of 5 different banding based on academic attainment of students in public examinations according to the Education Department, with band 1 being the highest and band 5 being the lowest in academic achievement), located at either urban areas or new towns with both government schools as well as parochial government-subsidized schools. For a total of 1400 questionnaires collected, 245 were discarded for any one of the following reasons: 1) when more than two sections of the questionnaire were unanswered; 2) when a clear response set could be identified; or 3) if subjects did not indicate their sex, or recent weight and/or their height thus making their BMI indeterminate. There is a possibility of response bias for those in lower forms or with lower academic achievement due to inferior literacy. Additionally, the present sample may not be an accurate representation of the full range of secondary schools in the community in terms of subjects' scholastic aptitude. Nevertheless, the current sample included a fairly heterogeneous group of Chinese adolescent females in Hong Kong.

#### Measures

Demographic Information: Age, BMI. Subjects' age, form, current weight and height from their latest measurements, fathers' and mothers' occupation were obtained as part of the questionnaire. Body Mass Index ( $BMI = \text{weight}/\text{height}^2$ ) for



each subject was calculated from the self-reported weight and height. Secondary school students in Hong Kong typically make yearly measurements of body weight and height at school. Therefore their own self-reported figures should reflect their recent weight and height measured within the last year. Self-reported weight and height have been found to have a correlation with actual weight and height of .94 and .80 in a sample of women in Hong Kong which can be considered reliable in survey studies (Ho & Donnan, 1986).

Fear of Fatness & Anti-fat attitude. The Attitudes About Weight and Dieting (AAWD) is a 13-item questionnaire for the assessment of attitudes towards fatness as well as fat people (Crandall, 1994). Subjects were asked to rate each item on a 5-point Likert scale ranging from “Strongly disagree”(1) to “Strongly agree”(5) on statements regarding a number of attitudes. A factor analysis using the principle component method of extraction was performed on the scale. Three factors: “anti-fat attitude”, “fear of fatness”, and “will power”, emerged as shown in Table 1. The “anti-fat attitude” factor accounted for 25.7% of the variance and the “fear of fatness” factor accounted for 15.2% of the variance of the scale. The first factor “anti-fat attitude” included items such as “I really don’t like fat people much”, and has a cronbach’s alpha of .80. The second factor of “fear of fatness” included items such as “I feel disgusted with myself when I gain weight” and has a cronbach’s alpha of .75. The third factor “will power” accounted for 8.3% of the variance which consisted of only two items on attitude towards controllability of fatness and relations between will power and fatness. The present study focused on the personal and societal attitudes towards fatness and therefore the “will power” factor was not included. High total scores on the Fear of Fatness factor indicate greater

**Table 1. Factor analysis of Attitude About Weight and Dieting Scale by**

**Principle Component Extraction**

<i>Factor</i>	<i>Item text</i>	<i>Factor Loadings</i>		
		<i>Factor1</i>	<i>Factor2</i>	<i>Factor3</i>
1    Anti-fat Attitude	♦ Fat people make me feel somewhat uncomfortable.	.717		
	♦ I tend to think that people who are overweight are a little untrustworthy.	.717		
	♦ I have a hard time taking fat people too seriously.	.651		
	♦ I really don't like fat people much.	.657		
	♦ Although some fat people are surely smart, in general, I think they tend not to be quite as bright as normal weight people.	.627		
	♦ If I were an employer looking to hire, I might avoid hiring a fat person.	.572		
	♦ Fat people tend to be fat pretty much through their own fault.	.524		
	♦ I don't have many friends who are fat.	.475		
2    Fear of fatness	♦ I worry about becoming fat.	.824		
	♦ I feel disgusted with myself when I gain weight.	.773		
	♦ One of the worst things that could happen to me would be if I gained 25 pounds.	.707		
3    Will power	♦ People who weigh too much could lose at least some part of their weight through a little exercise.		.737	
	♦ Some people are fat because they have no willpower.		.394	

*Note:* Only factor loadings with magnitude greater than .370 are displayed



aversion towards fatness, and high total scores on the Anti-fat Attitude Factor indicate more dislike of fat people.

History of Being Teased. The Perception of Teasing Scale-Weight Related Teasing (POTS) is a 12-item scale which measures a history of being teased about physical appearance (Thompson, Cattarin, Fowler & Fisher, 1995). Subjects were asked to rate the frequencies of being teased for fatness on a 5-point Likert scale from "Never"(1) to "Very often"(5) (6 items). Sample item includes "people made fun of you because you were heavy". The subjects were also asked to rate the effect of teasing on them (i.e. how upset they were) on a 5-point Likert scale from "Not upset"(1) to "Very upset"(5). The scale has been found to have a test-retest reliability of .90 for TH and .85 for ET in college women (Thompson et al., 1995). The internal consistency was .93 (Cronbach's alpha) in the present study.

Body Dissatisfaction. The Eating Disorder Inventory-Body Dissatisfaction subscale (EDI-BD) is a 9-item scale which assesses the level of dissatisfaction with several body parts (Garner, Olmstead, & Polivy, 1983). Subjects were asked to rate each item on a 6-point Likert scale ranging from "Always"(1) to "Never"(6). Higher scores reflecting greater body dissatisfaction. Test-retest reliability for the whole EDI over a one-week period has been found to be above .80 (Garner, Olmstead & Polivy, 1983). An alpha of .84 was found for this sample.

Self-esteem. The Rosenberg Self-esteem Scale (RSES) is a 10-item instrument for the assessment of global self-worth or self-acceptance (Rosenberg, 1979). The construct validity and predictive validity of the instrument were well documented (Blascovich and Tomaka, 1991). Subjects were asked to rate each item on a 4-point Likert scale from "Strongly disagree"(1) to "Strongly agree"(4)

resulting in a scale of 10 to 40. Higher scores on the RSES represent higher global self-esteem. Two-week test-retest reliability correlation of .80 has been reported (Rosenberg, 1979). The RSES has a cronbach's alpha of .77 for this sample.

Depression. The Center for Epidemiological Studies Scale-Depression (CESD) is a 20-item self-report questionnaire designed to assess symptoms of depression (Radloff, 1977). Subjects rated each item on a 4-point Likert scale from "Rarely or none of the time"(1) to "Always"(4). High scores represent high level of depression. The CESD has test-retest reliability that range form .51 to .67 (over 2 to 8 weeks) and .32 to .54 (over 3 to 12 months) (Corcoran and Fishcer, 1987). The alpha of this scale was .86 for this sample.

Pathogenic Weight Loss Behaviours, Binge Eating. The Eating Symptoms Checklist (ESC) is 12-item scale designed to assess eating disorder symptoms according to the diagnostic criteria of the Diagnostic and Statistical Manual of the American Psychiatric Association (4th ed.) (APA, 1994). The original scale (Li, 1994) consisted of 21 items, of which 12 were included in this study. Of the twelve items in the ESC, four items are of pathogenic weight loss behaviours, including laxative/diuretic use, self-induced vomiting, excessive exercise and dieting. Subjects were requested to endorse the frequencies at which they engaged in each of these behaviours. All four items were summed to yield a pathogenic weight loss behaviours score. There are also two items on binge eating behaviour. These two items were summed to yield a binge eating score.

Family Relations & Social Relations. The Offer's Self-image Questionnaire-Revised (OSIQ-R) measures the self-image of adolescents in twelve component areas including emotional tone, impulse control, mental health, social functioning,



family functioning, vocational attitudes, self-confidence, self-reliance, body image, sexuality, ethical values and idealism (Offer, Ostrov, Howard & Dolan, 1992).

Subjects were asked to rate all items on a 6-point Likert scale from “Describes me very well”(1) to “Does not describe me at all”(6). The OSIQ has been found to be a valid measure of self-image for Chinese adolescents (Turner & Mo, 1984).

The OSIQ-R Family Functioning subscale is a 13-item scale for the assessment of how adolescents feel about and relate with their parents (e.g. “I can count on my parents most of the time”). This subscale has been found to have a test-retest reliability of .63. The alpha is .75 for the present sample. Higher scores indicate open communication with parents and perception of the home as positive, warm and supportive.

The OSIQ-R Social Functioning subscale is a 9-item scale for the assessment of adolescent interpersonal relationships and friendships (e.g. “Being together with other people gives me a good feeling”). High scores on this subscale indicate being more in tune with and more able to develop meaningful relationships with individuals his/her own age. It is reported to have a Cronbach’s alpha of .6 to .79 and two year test-retest reliability of 0.61 (Offer, Ostrov, Howard & Dolan, 1992). The alpha for this subscale is .74 for the present sample.

Academic Achievement. The Academic Achievement Scale (AAS) is a 4-item self-generated scale for the assessment of the subjects’ own perceived school ability and intelligence (adapted from the Self-concept of School Ability Scale; Bachman, 1970). The scale included items on their perceived level of academic competency and academic stress such as “my school ability when compared with others in my grade” and “Confidence that I can meet the academic demands of my school

teacher". Subjects were asked to rate the items on a 4-point Likert scale from "Above average"(1) to "Below average"(4). The Chronbach's alpha value for this measure was found to be .73. Scores ranged from 4 to 16 with lower score indicating higher confidence in own academic achievement.

### Procedure

All questionnaires were distributed to the subjects by their form teachers or school prefects in their classrooms. Approval for participation in the survey was obtained from the school principals. All subjects participated in the study voluntarily. They were asked to complete the questionnaires and return them in the same day. Teachers and prefects were instructed to brief the participants on their right to confidentiality and the purpose of the study.



## Chapter 3

### Results

#### Demographic information

Sample characteristics are presented in Table 2. The mean age of the subjects girls was 14.64 (SD=1.82). Mean Body mass index (BMI) for the entire sample was 18.90 kg/m<sup>2</sup>. Based on BMI, Subjects were divided into five different groups according to the local growth index (Leung, 1994). The percentile cut-offs of 10, 25, 75 and 90 were adopted according to the subjects' age. The mean BMI for girls was 15.23 kg/m<sup>2</sup> (SD = 1.47) for the underweight group, 16.94 kg/m<sup>2</sup> (SD = .86) for the slightly underweight group, 18.65 kg/m<sup>2</sup> (SD = 1.14) for the average weight group, 21.49 kg/m<sup>2</sup> (SD = 1.12) for the overweight group and 25.97 kg/m<sup>2</sup> (SD = 3.72) for the obese group respectively. The present sample was found to consist of slightly more underweight (13%), and average weight adolescent girls (51%), and less overweight (13%) and obese girls (8%) than the latest local growth norm sample (10%, 50%, 15% and 10% respectively) (Leung, 1994). In particular, it is noted that only eight percent instead of ten percent of girls in the current sample were classified as obese at the 90th percentile.

Mean age of the subjects in different weight groups were found to be significantly different,  $F(4, 1151) = 5.56, p = .0002$ . Slightly underweight girls were the oldest, with a mean age of 15.08, followed by average weight girls, ( $M = 14.65$ ). The underweight group ( $M = 14.59$ ), overweight group ( $M = 14.51$ ) and obese group ( $M = 14.00$ ) were not found to be significantly different from one another in their mean age.

Heavier girls reported greater fear of fatness,  $F(4, 1151) = 40.45, p < .0001$ . Post-

**Table 2. Sample Characteristics: By Five Weight Groups**

Variables	Underwt. (n=151)	Slightly underwt. (n=169)	Average (n=595)	Overwt. (n=149)	Obese (n=91)	F	p
Age	14.59 <sup>abc</sup> (1.92)	15.08 <sup>b</sup> (1.93)	14.65 <sup>c</sup> (1.76)	14.51 <sup>ac</sup> (1.80)	14.00 <sup>a</sup> (1.66)	5.56	.0002
BMI	15.23 <sup>a</sup> (1.47)	16.94 <sup>b</sup> (.86)	18.65 <sup>c</sup> (1.14)	21.49 <sup>d</sup> (1.12)	25.97 <sup>e</sup> (3.72)	896.33	<.0001
Fear of Fat	7.33 <sup>a</sup> (2.90)	8.49 <sup>b</sup> (3.06)	9.84 <sup>c</sup> (2.82)	10.48 <sup>cd</sup> (2.65)	11.05 <sup>d</sup> (2.76)	40.45	<.0001
Anti-fat Attitude	15.89 (4.88)	14.90 (4.90)	14.95 (4.97)	14.82 (4.77)	14.14 (4.47)	2.01	n.s.
History of Teasing	14.26 <sup>a</sup> (6.03)	14.89 <sup>a</sup> (5.95)	18.17 <sup>b</sup> (7.40)	23.05 <sup>c</sup> (8.79)	28.78 <sup>d</sup> (10.85)	76.58	<.0001
Body Dissatisfaction	29.88 <sup>a</sup> (7.13)	31.89 <sup>a</sup> (7.28)	36.71 <sup>b</sup> (7.95)	41.18 <sup>c</sup> (7.17)	43.88 <sup>c</sup> (7.15)	77.49	<.0001
Self-esteem	26.33 (3.99)	26.30 (3.83)	26.34 (3.84)	26.31 (4.44)	25.30 (4.55)	1.36	n.s.
Depression	39.64 (8.91)	39.41 (8.37)	39.47 (8.38)	38.99 (8.67)	39.14 (8.25)	.15	n.s.
Pathogenic Weight Loss Behaviours	4.82 <sup>a</sup> (.77)	5.08 <sup>b</sup> (.79)	5.42 <sup>c</sup> (.79)	5.53 <sup>c</sup> (.73)	5.59 <sup>c</sup> (.70)	27.14	<.0001
Binge Eating	7.81 (3.21)	8.22 (3.09)	8.46 (3.06)	7.69 (2.83)	8.25 (3.09)	2.71	.0288
Family Relations	62.46 (8.42)	62.69 (8.72)	61.81 (9.33)	63.06 (9.79)	62.51 (8.33)	.75	n.s.
Social Relations	38.69 (5.89)	39.33 (5.05)	38.82 (5.95)	38.01 (6.52)	38.73 (6.64)	.96	n.s.
Academic Achievement	8.86 (2.28)	9.10 (2.06)	8.73 (2.13)	9.12 (2.12)	8.88 (2.12)	1.70	n.s.

*Note:* Means of different subgroups differ significantly at the .05 level.



hoc Tukey-HSD Test indicated that obese girls reported significantly greater fear of fatness ( $\underline{M} = 11.05$ ) than average weight ( $\underline{M} = 9.84$ ), slightly underweight ( $\underline{M} = 8.49$ ) and underweight girls ( $\underline{M} = 7.33$ ). Obese girls and overweight girls ( $\underline{M} = 10.48$ ) did not differ significantly in reported fear of fatness. The different weight groups did not differ in negative attitude towards fat people.

Heavier girls also reported more teasing for heavy weight in the past,  $F(4, 1151) = 76.58, p < .0001$ . Post-hoc testing indicated that average weight girls ( $\underline{M} = 18.17$ ) reported significantly more teasing than both underweight ( $\underline{M} = 14.26$ ) and slightly underweight girls ( $\underline{M} = 14.89$ ). Overweight girls ( $\underline{M} = 28.78$ ) reported more teasing than average weight girls, and obese girls ( $\underline{M} = 23.05$ ) reported more teasing than overweight girls.

Higher levels of body dissatisfaction was reported by heavier girls,  $F(4, 1151) = 77.49, p < .0001$ . According to post-hoc tests, average weight girls ( $\underline{M} = 36.71$ ) had higher body dissatisfaction than underweight ( $\underline{M} = 29.88$ ) and slightly underweight girls ( $\underline{M} = 31.89$ ). And obese girls ( $\underline{M} = 43.88$ ) as well as overweight girls ( $\underline{M} = 41.38$ ) had higher body dissatisfaction than average weight girls.

Heavier girls tended to report more pathogenic weight loss behaviours,  $F(4, 1151) = 27.14, p < .0001$ . Slightly underweight girls ( $\underline{M} = 5.08$ ) reported lower level of pathogenic weight loss behaviours than obese ( $\underline{M} = 5.59$ ), overweight ( $\underline{M} = 5.53$ ) and average weight subjects ( $\underline{M} = 5.42$ ). Underweight subjects reported lower levels of pathogenic weight loss behaviours than slightly underweight subjects. Heavier girls also tended to report more binge eating behaviour,  $F(4, 1151) = 2.71, p = .0288$ .

Girls from the different weight groups did not differ in self-reported level of



self-esteem and depression. The girls did not differ according to weight group on measures of their own perceived family relations, social relations as well as academic achievement.

In summary, heavier girls in this sample tended to be younger, and were teased significantly more for fatness and were less satisfied with their body appearance. More pathological weight loss behaviours were reported by obese than average weight girls. However, girls in different weight groups did not differ significantly on general measures of psychosocial adjustment including self-esteem, depression, perceived family and social relationships and academic achievement.

#### Comparison of overweight and normal weight girls

To further examine differences in psychological functioning between overweight versus normal weight girls in the current sample, the initial five weight groups were reclassified into two. Underweight, slightly underweight and average weight groups were combined to form a non-obese group ( $n = 915$ ). The overweight and obese groups were combined to form an obese group ( $n = 240$ ). The reported mean BMI were  $17.77 \text{ kg/m}^2$  ( $SD = 1.74$ ) and  $23.20 \text{ kg/m}^2$  ( $SD = 3.28$ ) respectively for the non-obese and obese groups. Characteristics of the two groups on the dependent measures are summarized in Table 3. Comparisons of the obese and non-obese groups were essentially identical to comparisons of the five weight groups, except that the mildly significant difference in binge eating turned insignificant in the comparison of non-obese and obese groups. The obese group had a slightly lower mean age ( $M = 14.31$ ) than the nonobese group ( $M = 14.75$ ),  $t(1, 1154) = 9.21, p = .0025$ . Obese girls reported greater fear of fatness than non-obese girls,  $t(1, 1154) = 49.71, p < .0001$ . The two groups did not differ in negative attitude towards fat people. Obese girls also reported more teasing for heavy

**Table 3. Sample Characteristics: Obese vs. Non-obese Girls**

<b>Variables</b>	<b>Non-Obese (n=915)</b>	<b>Obese (n=240)</b>	<b>t</b>	<b>p</b>
Age	14.72 (1.83)	14.31 (1.76)	9.21	.0025
BMI	17.77 (1.74)	23.20 (3.28)	1212.58	<.0001
Fear of Fat	9.18 (3.04)	10.70 (2.70)	49.71	<.0001
Anti-fat Attitude	15.10 (4.95)	14.56 (4.66)	2.28	n.s.
History of Teasing	16.92 (7.14)	25.27 (10.01)	213.97	<.0001
Body Dissatisfaction	34.70 (8.15)	42.20 (7.27)	162.93	<.0001
Self-esteem	26.33 (3.86)	25.92 (4.50)	1.93	n.s.
Depression	39.49 (8.46)	39.04 (8.50)	.51	n.s.
Path. Wt. Loss Beh.	5.26 (.82)	5.55 (.72)	25.87	<.0001
Binge Eating	8.31 (3.09)	7.90 (2.94)	3.29	n.s.
Family Relations	62.08 (9.07)	62.86 (9.27)	1.33	n.s.
Social Relations	38.89 (5.79)	38.28 (6.56)	1.93	n.s.
Academic Achievement	8.82 (2.15)	9.03 (2.12)	1.94	n.s.

weight and clumsiness in the past with greater distress from teasing,  $t(1, 1154) = 213.97, p < .0001$ . Higher levels of body dissatisfaction was reported by heavier girls,  $t(1, 1154) = 162.93, p < .0001$ .

Obese and non-obese girls did not differ in self-reported levels of self-esteem and depression. Obese girls reported more pathogenic weight loss behaviours than non-obese girls,  $t(1, 1154) = 25.87, p < .0001$ , with no significant difference between the two groups in binge eating behaviour. The girls did not differ according to weight group on measures of their own perceived family relations, social relations as well as academic achievement.

In sum, the results from two group comparison resemble the comparison of the five weight groups. Girls in the overweight group reported receiving more negative verbal commentary regarding their weight than girls with normal weight. They reported more distress from teasing, greater fear of fatness, body dissatisfaction, and endorsed more pathological eating behaviours. Overweight girls did not differ from normal weight girls on all measures of general psychological functioning.

#### Frequencies of pathogenic weight loss behaviour

The frequencies of 4 Pathogenic Weight Loss Behaviours were also looked at individually: laxative/diuretic use, self-induced vomiting, excessive exercise and dieting. Subjects who checked 1 on the 5-point Likert scale were recoded as “Never” having engaged in the particular behaviour. Subjects who checked 2 to 5 on the item were recoded as “Ever” having engaged in the behaviour.

Frequencies of disordered weight loss behaviours reported are shown in Table 4 for the obese and normal weight groups. The frequencies of the pathogenic weight loss



**Table 4. Frequency distribution of pathogenic weight loss behaviour**

		<b>Non-Obese</b> (n=915)	<b>Obese</b> (n=240)	<b>Total</b> (n=1155)	<b>X<sup>2</sup></b>	<b>p</b>
<b>Laxatives &amp; diuretics use</b>						
	<b>No</b>	97.6	98.8	97.8		
	<b>Yes</b>	2.4	1.3	2.2	1.20	n.s.
<b>Self-induced vomiting</b>						
	<b>No</b>	97.8	95.0	97.2		
	<b>Yes</b>	2.2	5.0	2.8	5.59	.018
<b>Excessive exercise</b>						
	<b>No</b>	53.4	33.8	49.3		
	<b>Yes</b>	46.6	66.3	50.7	29.20	<.001
<b>Dieting</b>						
	<b>No</b>	25.7	16.7	23.8		
	<b>Yes</b>	74.3	83.3	76.2	8.56	.003

behaviour for the two groups were analysed using two-by-two chi-square analysis.

The obese group (5.0%) engaged in self-induced vomiting more frequently than non-obese girls (2.2),  $\chi^2(1, N = 1152) = 5.59, p = .018$ . The two groups did not differ in their frequencies of laxative and diuretic use,  $\chi^2(1, N = 1154) = 1.20, n.s$ . Obese girls engaged in both excessive exercise and dieting (66.3%;83.3%) more frequently than non-obese girls ( $P = 46.6\%$ ;  $P = 74.3\%$ ),  $\chi^2(1, N = 1154) = 29.20, p < .001$ ,  $\chi^2(1, N = 1154) = 8.56, p = .003$ . The overall frequencies of pathogenic weight loss behaviours adopted by girls in both weight groups were low. Laxatives or diuretics use was reported by a total of 2.2% of the girls and self-induced vomiting was reported by a total of 2.8% of the girls. A total of 50.7% of the girls reported ever using excessive exercise for losing weight, while 76.2% of them reported dieting ever to lose weight.

In summary, obese girls reported higher frequencies of self-induced vomiting, excessive exercising and dieting than non-obese girls. It is important to note that the less extreme weight loss behaviours of over-exercising and dieting were used by over half of the girls in both groups.

#### Correlation of BMI, fear of fatness, history of being teased, body dissatisfaction, etc.

The correlation matrix for Body Mass Index, measures of fear of fatness, history and experience of being teased, body dissatisfaction, self-esteem, depression, binge eating, eating pathology, perceived family and social relations as well as academic achievement is shown in Table 5.

In the present study, high BMI was associated with more fear of fatness,  $r(1155) = .36, p < .001$ , being teased more frequently for weight-related attributes in the past,  $r(1155) = .54, p < .001$ , higher levels of body dissatisfaction,  $r(1154) = .49, p < .001$ .

Table 5. Correlation Matrix

(n=1155)	BMI	Fear of Fat	History of Teasing	Body Dissat.	Self-esteem	Depression	Binge Eating	Path. Wt. L. Beh.	Family Relations	Social Relations	Academic Achiev.
BMI	x										
Fear of Fat	.36**	x									
History of Teasing	.54**	.43**	x								
Body Dissat.	.49**	.55**	.49**	x							
Self-esteem	-.03	-.19**	-.16**	-.19**	x						
Depression	.02	.22**	.20**	.17**	-.51**	x					
Binge Eating	.03	.19**	.14**	.17**	-.10**	.20**	x				
Path. Wt. L. Beh.	.28**	.45**	.35**	.38**	-.02	.14**	.33**	x			
Family Relations	.01	-.14**	-.12**	-.09	.36**	-.45**	-.15**	-.09	x		
Social Relations	-.05	-.13**	-.14**	-.13**	.37**	-.46**	-.13**	-.07	.36**	x	
Academic Achiev.	.00	-.11**	-.05	-.12**	.36**	-.29**	-.08	-.00	.26**	.12**	x

Note: '\*\*' represents  $p < .001$ .



and more pathogenic weight loss behaviours,  $r(1155) = .28, p < .001$ .

Greater fear of fatness was associated with more weight-related teasing in the past,  $r(1155) = .43, p < .001$ , greater body dissatisfaction,  $r(1155) = .55, p < .001$ , lower global self-esteem,  $r(1155) = -.19, p < .001$ , and higher levels of depression,  $r(1155) = .22, p < .001$ . Greater fear of fatness was also associated with higher levels of pathogenic weight loss behaviours and binge eating behaviour,  $r(1155) = .45, p < .001$  and  $r(1155) = .19, p < .001$ .

Being teased more for fatness was associated with greater body dissatisfaction,  $r(1155) = .49, p < .001$ , higher levels of depression,  $r(1155) = .20, p < .001$  and lower self-esteem,  $r(1155) = -.16, p < .001$ . Higher levels of teasing were also associated with pathogenic weight loss behaviours,  $r(1155) = .20, p < .01$ . Teasing history was associated with poorer family relations,  $r(1155) = -.12, p < .001$ , and social relations,  $r(1155) = -.14, p < .001$ .

Higher levels of body dissatisfaction was associated with lower self-esteem,  $r(1155) = -.19, p < .001$  and higher levels of depression,  $r(1155) = .17, p < .001$ . Greater body dissatisfaction is associated with more bingeing,  $r(1155) = .17, p < .001$  and eating pathology,  $r(1155) = .38, p < .001$ . It is associated with poorer perceived social relations,  $r(1155) = -.13, p < .001$ , and perceived academic achievement,  $r(1155) = -.12, p < .001$ .

In summary, higher BMI was associated with greater fear of fatness, teasing history regarding fatness, higher body dissatisfaction and pathogenic weight loss behaviours. Greater fear of fatness as well as teasing history were both associated with, lower self-esteem, higher levels of depression, body dissatisfaction and pathogenic weight loss behaviours. Teasing history was also related to poorer

family and social relations. Higher body dissatisfaction was associated with lower global self-esteem, higher levels of depression, eating pathology and binge eating, as well as other areas of general psychological functioning in perceived social functioning and academic achievement.

### Structural Equation Modeling

The proposed path-analytic model (see Figure 1) was tested for the entire sample. The model proposed that for the adolescent girls higher body mass index (BMI) contributes directly to reports of more teasing for fatness and experience of higher body dissatisfaction. The model predicts that teasing history and body dissatisfaction in turn would predispose these adolescent girls to lower global self-esteem and depression. Table 6 shows the intercorrelations and standard deviations of the measures that were used for the analysis.

Initial tests indicate that teasing history (TH) had no direct effect on self-esteem (SE). As a result, this nonsignificant path was eliminated in the final model. On the other hand, the Lagrange Multiplier Test indicated that teasing history (TH) might have a direct effect on depression (DEP). This pathway linking teasing history and depression was added to the model. It was subsequently found to have a direct effect on depression and was included in the final model.

Non-significant chi-square values are normally used to indicate good model fit. But as larger sample sizes tend to yield stronger statistical power, thereby increasing the probability of detecting trivial differences, the Normed Fit Index (NFI) and the Comparative Fit Index (CFI) were used to evaluate the fit of the model (Bentler, 1989). Both NFI and CFI are measures of the relative adequacy of a model on a continuum of

**Table 6** Correlations and standard deviations of dependent measures

	BMI	TEASE	BD	SE	DEP
BMI	X				
TEASE	.54	X			
BD	.49	.49	X		
SE	-.04	-.16	-.20	X	
DEP	.02	.20	.17	-.51	X
Stand. Dev.	3.08	8.54	8.57	4.00	8.47

*Note:* BMI = Body Mass Index; TEASE = History of being teased; BD = Body Dissatisfaction; SE = Self-esteem; DEP = Depression



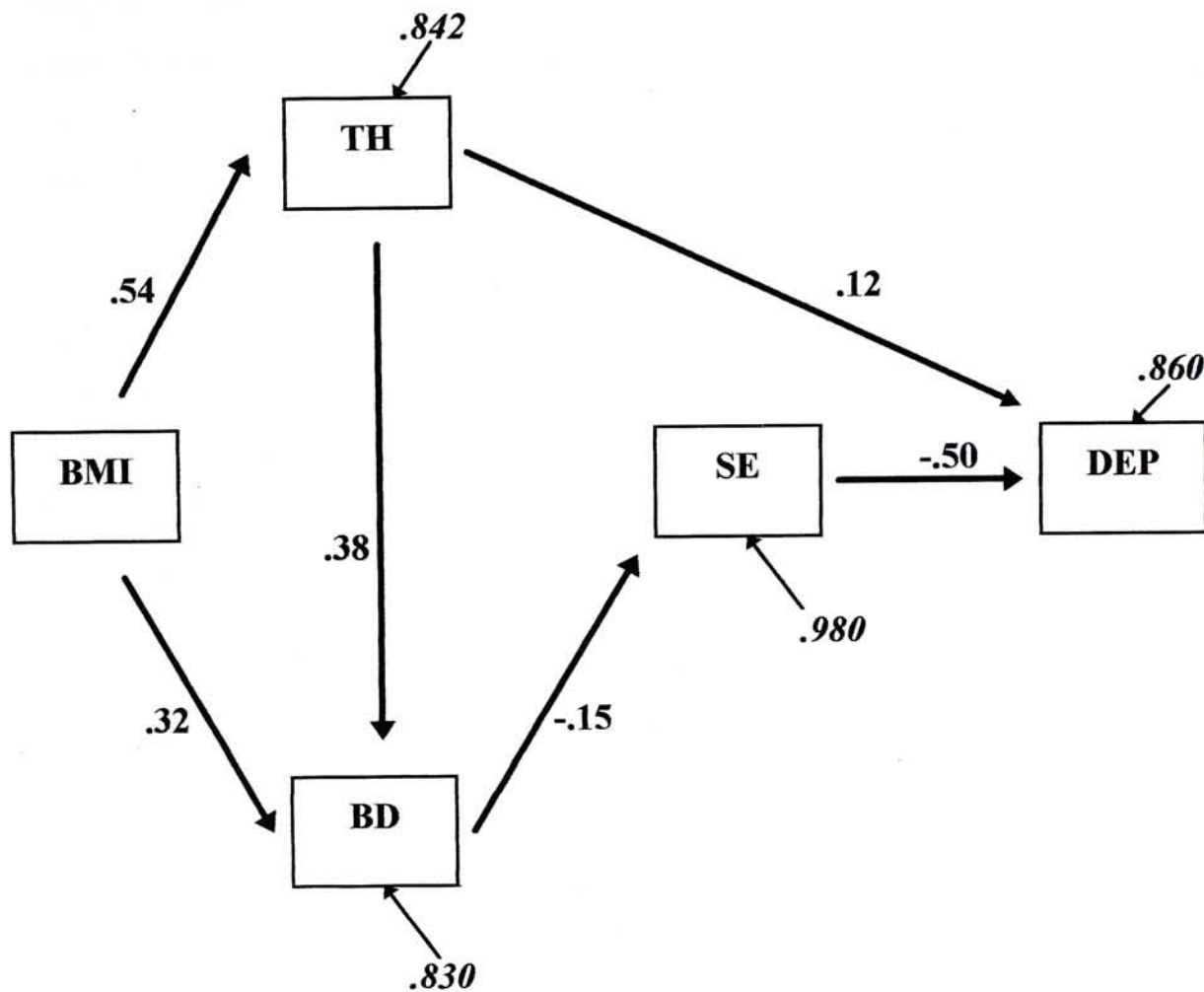
models ranging from null (NFI or CFI = 0; variables unrelated) to saturated (NFI or CFI = 1; all variables related). The model yielded  $X^2(4, 240) = 6.516$ ,  $p = .16$ , NFI = .975, CFI = .990. According to Bentler (1989), a NFI or CFI or .90 or above indicates good fit between the model and the data, thus these results suggest the model tested is an acceptable explanation of the data. The final model is presented in Figure 2.

The direct, indirect and total effects of the variables are being summarized in Table 7 for the final model. Self-reported BMI had direct positive effects on history of being teased (.54) and body dissatisfaction (.17). Heavier girls reported being teased more for their weight and greater body dissatisfaction. Teasing history had direct positive effects on body dissatisfaction (.38) and depression (.12). Being teased more for fatness leads to greater body dissatisfaction and more depressive symptoms. Body dissatisfaction also had direct negative effect on self-esteem (-.15). Experiencing body dissatisfaction predisposes these girls to lower regard for themselves. There is significant indirect effect of weight (BMI) on body dissatisfaction via teasing history (.17). There is significant indirect effect of teasing history on self-esteem via body dissatisfaction (-.06). There are indirect effects of BMI (total of .11) on depression (through teasing history, and body dissatisfaction with self-esteem), teasing history (.03) on depression (through body dissatisfaction and self-esteem), and body dissatisfaction (.10) on depression (through self-esteem).

In summary, results indicate that body mass has direct positive effects on teasing history and body dissatisfaction. Teasing history had direct positive effects on body dissatisfaction and depression for obese girls. Teasing history was not found to have a direct effect on global self-esteem but an indirect negative effect on

**Figure 2.**

Significant paths of causal relations between Body Mass Index, Teasing History, Body Dissatisfaction, Self-esteem and Depression.



*Note:* BMI = Body Mass Index; TH = Teasing History; BD = Body Dissatisfaction; SE = Self-esteem; DEP = Depression. Regression coefficients are standardized and are all significant at .001 level. Residual variances are in italics. NFI = .975; CFI = .990.

Table 7    Direct, indirect and total effects

Variables	Direct	Indirect	Total
Teasing History			
Body Mass Index	.54	/	.54
Body Dissatisfaction			
Body Mass Index	/	.17	.17
Teasing History	.38	/	.38
Self-esteem			
Teasing History		-.06	-.06
Body Dissatisfaction	-.15	/	-.15
Depression			
Body Mass Index	/	.11	.11
Teasing History	.12	.03	.15
Body Dissatisfaction	/	.10	.10
Self-esteem	-.50	/	-.50

Note.    All direct and indirect effects are significant at .05 level.



it via body dissatisfaction only. Body mass had a negative indirect effect on depression through teasing history and body dissatisfaction.

## **Chapter 4**

### **Discussion**

The present study aimed at examining the psychological conditions of obese Chinese adolescent girls in Hong Kong as compared with normal weight girls Hong Kong. Results from group comparisons indicated that obese Chinese adolescent girls indeed share many common general psychological characteristics with normal weight girls as suggested by research in the West (Friedman & Brownell, 1995; O'Neil & Jarrell, 1992). As predicted, normal weight and overweight girls did not differ on measures of self-reported self-esteem, depressive symptoms, relations with own peers and family, and satisfaction with academic competence.

Results indicated that obese girls reported being teased most often in social situations in the past than girls in other weight groups, and reported experiencing greater distress from teasing. The findings support the hypothesis that overweight adolescent girls were indeed more affected by negative verbal commentary about their weight, which is an effect not found in other forms of teasing such as academic competency and overall appearance (Thompson Cattarin, Fowler & Fisher, 1995). It is also noted that average weight and overweight girls also reported more teasing in the past than girls in the underweight groups. It is possible that even girls in these two groups were perceived as fat by their families and peers or were teased in the past. Results from intercorrelations of the measures indicated that greater teasing history, instead of higher BMI, was associated with a constellation of psychosocial deficits including lower self-esteem, more depressed mood, body dissatisfaction and disordered eating behaviours. History of being teased for fatness is therefore important in mediating the body-esteem of these

adolescent girls. Having received negative comments on their weight appeared to generalize to many areas of their psychological functioning such as poorer global self-esteem and mood, and also to various important developmental tasks such as not being able to maintain good family and peer relations.

Additionally, obese girls have also reported greater fear of fatness than non-obese girls. According to intercorrelation analysis, fear of fatness was not only associated with body dissatisfaction, pathogenic weight loss behaviours and binge eating, but also with other indicators of general psychological maladjustment. Especially for girls who are already overweight, fear of gaining weight to these adolescent girls might represent even greater deviation from their desired weight and perceived norm for physical attractiveness. Being significantly heavier than normal is undesirable to them, and relates to lower self-esteem, depression, binge eating and weight loss behaviours. It appears that their attitude towards fatness, instead of actual fatness, has a stronger relations with psychological deficits.

According to group comparisons, obese girls have greater body dissatisfaction than non-obese girls. It is a difference which could be attributed to their mean BMI which is much higher than normal. Results also showed that average weight girls also reported higher body dissatisfaction than underweight girls. Previous research has indicated that desired BMI, instead of actual BMI, is more predictive of body dissatisfaction (Cash, Winstead & Janda, 1986; Li, 1994). As a result, even girls with normal weight are likely to report dissatisfaction with body weight and shape.

It has been suggested that psychological distress observed in obese persons, if any, might be attributable to societal discrimination that they experience instead of personality deficits (Stunkard & Wadden, 1985). Results from group comparisons



revealed that obese girls in general reported more disordered eating behaviours than non-obese girls. Weight loss behaviours such as dieting, over-exercising and self-induced vomiting were more prevalent among obese than non-obese girls. Higher prevalence of pathogenic weight loss behaviours among overweight girls in this sample reflects the possible vulnerability of these girls to disordered eating behaviours.

The popularity of dieting and over-exercising in over half of the Chinese adolescent girls in Hong Kong regardless of their weight status was consistent with previous research (Li, 1994). The use of more extreme measures of laxative/diuretic use and self-induced vomiting were rare, and the findings are also consistent with previous research on eating disorders in Hong Kong (Lee, 1991; Lee, 1992; Chen et al., 1993). Previous research on disordered eating behaviours in Hong Kong suggested that Chinese adolescent girls have been protected from developing eating disorders by their generally slim physique as compared to Caucasian girls, and cultural differences in attitude towards physical beauty (Lee, 1992; Li, 1994). However, obese girls are more susceptible to dissatisfaction with body weight and negative evaluation for their appearance. It has been suggested that Western culture of thinness not only relates thinness with physical beauty, but also with health, competency and personal control (Gilbert & Thompson, 1996). With increasing westernization of attitudes towards beauty and the endorsement of desire for thinness among Chinese adolescent girls, the urge for overweight individuals to adopt disordered eating behaviours in order to lose weight is likely to increase.

The prevalence of dieting (83.3%) and overexercising (66.3%) were rather high

for obese girls when compared to normal weight girls (74.3% and 46.6%).

Research has indicated that people who diet are more likely to develop binge eating. These girls who adopted more disordered eating behaviours might be at a higher risk for developing more severe forms of eating pathology such as binge eating disorder (Striegel-Moore, 1993). Although most of those girls are not likely to meet the diagnosis of eating disorders, the impact of such behaviours on the psychological and physical health of these girls might still be considerable.

Insignificant difference in binge eating behaviours in group comparison showed that overweight girls were not more likely to binge than their normal weight counterparts. This finding supported the view that bulimia is not associated with obesity but probably with other risk factors such as socioeconomic factors and low self-esteem (Striegel-Moore, Silberstein & Rodin, 1986; Shisslak, Pazda & Crago, 1990).

Results provided support for the path-analytic model which predicted the direct and indirect effects of weight on teasing history, body dissatisfaction and ultimately their role in affecting the adolescent girls' self-esteem and mood. The results supported the hypothesis that heavier obese girls received more negative comments for their heaviness and had greater dislike of one's body appearance. Higher BMI was found to have indirect negative impact on self-esteem and mood via two different pathways: the experience of weight-related teasing and body dissatisfaction. Instead of greater body mass, it was experience of negative evaluation and dissatisfaction with body shape that caused poorer general psychological adjustment for heavier girls.

It is also noted that BMI only accounted for a small amount of variance in



teasing history in the model being tested (16%). The results suggested that other factors not tested in the present study, such as cultural norms for female physical attractiveness and family attitude towards weight and appearance, might also have contributed to the experience of teasing (Leung, Schwartzman & Steiger, 1996; Mendelson, White & Schliecker, 1995). Closer examination of these girls' degree of westernization and attitude towards slimness might help to explain the amount and impact of negative evaluation reported. The source of teasing from e.g. family members or peers might also have differential impact on the girls. Negative evaluation from peers might have a greater impact on adolescent girls' body image and eating behaviours.

Furthermore, being teased regarding fatness not only contributes to lower self-regard indirectly, the impact seems to directly put them into experiencing greater depression as well, suggesting the magnitude and immediacy of weight-related teasing on the psychological well-being of obese girls. It has been reported that girls are particularly vulnerable to body appearance-related social judgment during adolescence and early adulthood (Engfer, Walper & Rutter, 1994; Heatherton, Mahamedi, Striepe, Field & Keel, 1997). However, the actual age at which teasing was received was not examined in the Perception of Teasing Scale being used. It remains unclear whether teasing received at an earlier age poses as much impact on self-esteem and depression as teasing received during adolescence.

There are a number of limitations in the present research. Firstly, one of the objectives of this study was to investigate the effect of weight-related teasing on the psychological well-being of overweight girls. The current study is based on the retrospective report of teasing history by subjects in different weight groups. It



failed to account for the direct effect of the girls' weight status on their psychological wellbeing at the time when teasing occurred. As mentioned earlier, teasing for fatness might have occurred early in the subjects' childhood or took place very recently during adolescence. The effect of timing of negative verbal commentary on obese girls' psychological adjustment should be tested in a longitudinal manner.

Secondly, the number of obese subjects in the study was limited. The number of obese adolescent girls that falls above the 90th percentile cutoff for BMI was limited despite the large total number of subjects being included. Comparisons with non-obese girls have been made after combining the obese and overweight group, and as a result the magnitude of obesity has been compromised to some degree yielding a mean BMI of  $23.20 \text{ Kg/M}^2$ , substantially lower than the mean BMI of up to  $28 \text{ Kg/M}^2$  for classification of obesity in research done in North America (Leon, et al., 1993; Wadden, Foster, Stunkard & Linowitz, 1989). However, Chinese adolescents in Hong Kong has been found to have an overall mean BMI of 17 to  $18 \text{ Kg/M}^2$  only (Li, 1994; Leung, 1994), much lower than a mean BMI of  $23 \text{ Kg/M}^2$  in the West in one study (Wadden, et al., 1989). Obesity is therefore less severe and less prevalent among adolescents in Hong Kong compared to the West. Subjects in the obese group still had substantially higher body mass than those in the normal weight group.

The effects of teasing history in the model established the importance of negative evaluation on weight in future research on the development of body and self-image in adolescence. The effect of negative evaluation might also help to illustrate the impact of cultural attitude towards fatness, such as popular

misconceptions of associating obesity with laziness, clumsiness and feeble-mindedness, on the psychological functioning of heavier individuals. Regardless of their weight, how the girls have appraised the experience of teasing was not tested according to the present study. It is possible that for some girls even friendly teasing for childhood chubbiness have been taken as a tease, affecting the girls regardless of their current weight status. Upon and after reaching puberty, when physical appearance and thinness become more important for them, remembrances of such remarks from acquaintances could turn up in the girls' minds. These remarks would then become part of the cognitive elements in their drive for thinness, leading to body dissatisfaction and depression (Greenwald & Banaji, 1995; Rosen, 1996). Future research should also look at how appraisal of teasing might affect global psychological well-being.

Moreover, weight loss behaviours in obese girls indicate that future research should further investigate the impact of earlier attempts to lose weight on the general psychological functioning of overweight adolescents and those with a history of being overweight during childhood. It has been suggested that overweight individuals often fail to maintain weight loss from dieting, which might lead to massive fluctuations of body weight. People with early onset obesity are likely to have attempted dieting and other methods of weight loss since an early age. Weight fluctuations might have occurred for adolescents who attempted weight loss since childhood. Recent research on the impact of weight cycling on the psychological adjustment of obese individuals showed inconclusive evidence for the impact of weight loss attempts and weight cycling on the mood and general psychological functioning of obese individuals (Rosen, Gross & Vara, 1987; Foryet,



Brunner, Goodrick, Cutter, Brownell & St. Jeor, 1995; Bartlett, Wadden & Vogt, 1996; Venditti, Wing, Jakicic, Butler & Marcus, 1996). There are a number of methodological problems in the present body of research including difficulties in defining weight cycling. But as heavy weight and teasing were found to increase body dissatisfaction, future research should investigate the psychological functioning of obese adolescent girls who attempted to lose weight many times, and whether they are at a higher risk of developing body dissatisfaction and disordered eating behaviours.

As the Chinese populations of Hong Kong has seen the transition from developing economy into a more affluent developed community in the past few decades, the percentage of people who are overweight have continued to increase. As a result, obesity would continue to affect more and more Chinese people. Debate over the need for weight loss treatment for obese people has argued that a healthier life-style including a healthy diet and regular exercise should be recommended instead of aiming for massive weight loss through dieting that tends to be regained quickly (Brownell & Wadden, 1992, Brownell & Rodin, 1994; Kirschenbaum & Fitzgibbon, 1995). With concern over health issues related to obesity continuing to increase, it might be necessary for the benefits of weight loss attempts for obese individuals be considered more carefully.



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Appendix

Questionnaire used in the survey

**體重與社交心理健康問卷調查**

以下是一份有關體重及社交心理成長之問卷，請跟據你的個人經歷盡量回答所有問題。  
答案沒有所謂對與不對，好與不好，只需符合你自己的記憶及感受作答。 多謝你參與  
此項問卷調查。

**(I. Demographic information)**

個人資料:

姓名 : \_\_\_\_\_

級別 : \_\_\_\_\_

年紀 : \_\_\_\_\_

你最近之體重 : \_\_\_\_\_ 磅 或 \_\_\_\_\_ 公斤

你最近之身高 : \_\_\_\_\_ 厘米 或 \_\_\_\_\_ 尺 \_\_\_\_\_ 吋

父親職業 : \_\_\_\_\_

母親職業 : \_\_\_\_\_

性別 : 男 / 女

**(II. Attitude towards weight and dieting)**

請細心閱讀以下各句子，並圈出 0 至 5 之間的一個數字表示你同意的程度：

	非常 反對					非常 同意				
1. 我擔心自己會變肥。	1	2	3	4	5					
2. 當我體重增加時我會嫌惡自己。	1	2	3	4	5					
3. 增重 25 磅會是可能發生在我身上最壞的一件事之一。	1	2	3	4	5					
4. 有些人肥胖是因為他們意志力薄弱。	1	2	3	4	5					
5. 尊重肥人對我是件困難的事。	1	2	3	4	5					
6. 我真的不太喜歡肥人。	1	2	3	4	5					
7. 過重的人只要做少許運動經已最少可以減去部份的體重。	1	2	3	4	5					
8. 肥人之以肥胖都是因為他們的過錯。	1	2	3	4	5					
9. 雖然部份肥人確實是很聰明，但大致上我認他們不及正常體重的人般聰明。	1	2	3	4	5					
10. 我傾向認為過重的人都不大可靠。	1	2	3	4	5					
11. 我沒有個朋友是肥胖的。	1	2	3	4	5					
12. 若我是個需要請人的僱主我會避免請一個肥人。	1	2	3	4	5					
13. 肥人會令我感到有點不舒服。	1	2	3	4	5					

(III. Perception of teasing scale)

以下問題需根據你成長過程的經歷作答(從 5 歲直至目前)

a. 首先，按照你的個人經歷評分(從不 至 經常 程度)

b. 然後根據你當時的經歷令你有幾過來評分 (不難過 至非常難過 程度)。若 a.部份的評分是從不則不用回答此部份。

1a. 別人曾因為你過重而取笑你。	從不 <input type="checkbox"/> 1 不難過	<input type="checkbox"/> 2	有時 <input type="checkbox"/> 3 有點難過	<input type="checkbox"/> 4	經常 <input type="checkbox"/> 5 非常難過
b. 你有幾難過?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2a. 別人曾因你太肥而以你來開玩笑。	從不 <input type="checkbox"/> 1 不難過	<input type="checkbox"/> 2	有時 <input type="checkbox"/> 3 有點難過	<input type="checkbox"/> 4	經常 <input type="checkbox"/> 5 非常難過
b. 你有幾難過?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3a. 因為你身體過份肥胖，做運動時笨手笨腳而被人嘲笑。	從不 <input type="checkbox"/> 1 不難過	<input type="checkbox"/> 2	有時 <input type="checkbox"/> 3 有點難過	<input type="checkbox"/> 4	經常 <input type="checkbox"/> 5 非常難過
b. 你有幾難過?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4a. 別人替你改花名如「肥妹」。	從不 <input type="checkbox"/> 1 不難過	<input type="checkbox"/> 2	有時 <input type="checkbox"/> 3 有點難過	<input type="checkbox"/> 4	經常 <input type="checkbox"/> 5 非常難過
b. 你有幾難過?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5a. 別人因為你過重而對你指手劃腳。	從不 <input type="checkbox"/> 1 不難過	<input type="checkbox"/> 2	有時 <input type="checkbox"/> 3 有點難過	<input type="checkbox"/> 4	經常 <input type="checkbox"/> 5 非常難過
b. 你有幾難過?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6a. 不認識你的人會因為你肥胖而在你背後私下取笑你。	從不 <input type="checkbox"/> 1 不難過	<input type="checkbox"/> 2	有時 <input type="checkbox"/> 3 有點難過	<input type="checkbox"/> 4	經常 <input type="checkbox"/> 5 非常難過
b. 你有幾難過?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5



(IV. Body dissatisfaction - EDI)

	總是		常常	間中		從不
	1	2	3	4	5	6
1. 我認為我的肚臍太大。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. 我認為我的大腿太粗。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. 我認為我的腰圍恰到好處。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. 我對我的體形感到滿意。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. 我喜歡我臀部(屁股)的線條。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. 我認為我的坐圍太粗。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. 我認為我的大腿不大不細，恰到好處。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. 我認為我的臀部(屁股)太大。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. 我認為我的坐圍不大，恰到好處。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(V. Eating disorder symptoms questionnaire)

請細心閱讀以下各題，並選出(✓) 最適合你的情況：

1. 我曾不能自制地進食，直至肚皮有快要爆炸的感覺才停止
- (1) ☐ 從未試過                      (2) ☐ 每月一次或以下                      (3) ☐ 每月 2 至 3 次
- (4) ☐ 每週 1 次                      (5) ☐ 每週兩次或以上
2. 我使用瀉藥、利尿劑去控制體重
- (1) ☐ 從未試過                      (2) ☐ 每月一次或以下                      (3) ☐ 每月 2 至 3 次
- (4) ☐ 每週 1 次                      (5) ☐ 每週兩次或以上
3. 我有時進食直至疲倦不堪才停止
- (1) ☐ 從未試過                      (2) ☐ 每月一次或以下                      (3) ☐ 每月 2 至 3 次
- (4) ☐ 每週 1 次                      (5) ☐ 每週兩次或以上
4. 我暴食時，多數選擇雪糕、朱古力、布甸或其他糖份高的食物
- (1) ☐ 很少是                      (2) ☐ 間中是                      (3) ☐ 多數是
- (4) ☐ 大多數是                      (5) ☐ 我從不暴食
5. 我認為我越苗條，我的自我價值越高
- (1) ☐ 十分不對                      (2) ☐ 不對                      (3) ☐ 對                      (4) ☐ 十分對
6. 我曾刻意將吞下的食物嘔出，以免增磅
- (1) ☐ 從未試過                      (2) ☐ 每月一次或以下                      (3) ☐ 每月 2 至 3 次
- (4) ☐ 每週 1 次                      (5) ☐ 每週兩次或以上

7. 爲了減肥，我曾經花大量時間做運動  
(1) ☐ 從未試過 (2) ☐ 每月一次或以下 (3) ☐ 每月 2 至 3 次  
(4) ☐ 每週 1 次 (5) ☐ 每週兩次或以上
8. 我曾嘗試節食，甚至禁食去減肥  
(1) ☐ 很少是 (2) ☐ 間中是 (3) ☐ 多數是  
(4) ☐ 大多數是 (5) ☐ 我從不暴食
9. 暴食時，我多數會選擇高澱粉質的食物，如餅乾、旦糕、薯條、飯等  
(1) ☐ 很少是 (2) ☐ 間中是 (3) ☐ 多數是  
(4) ☐ 大多數是 (5) ☐ 我從不暴食
10. 我的體重在一個月內最多曾減少：  
(1) ☐ 少於 4 磅 (2) ☐ 4 - 7 磅 (3) ☐ 8 - 11 磅  
(4) ☐ 12 - 20 磅 (5) ☐ 20 磅以上
11. 我覺得苗條的身裁極爲重要  
(1) ☐ 十分不對 (2) ☐ 不對 (3) ☐ 對 (4) ☐ 十分對
12. 我的體重在一個月內最多曾增加：  
(1) ☐ 少於 4 磅 (2) ☐ 4 - 7 磅 (3) ☐ 8 - 11 磅  
(4) ☐ 12 - 20 磅 (5) ☐ 20 磅以上

(VI. Social relations, OSIQ-R)

請細心閱讀以下各題，並選出(✓) 最適合你的情況。答案沒有所謂對與不對，好與不好，而只需根據你對自己的感覺作答。

此句子形容你.....

	完全 適合	很 適合	適 合	不大 適合	很不 適合	全不 適合
	(1)	(2)	(3)	(4)	(5)	(6)
1. 在旅行和社交聚會的時候我會覺得自己與其他人好象格格不入。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. 我想其他人都不喜歡我。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. 我覺得結交朋友是一件極難的事。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. 我不介意被人更正，因為我可以從中學習。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. 我寧可單獨一個人，也不願意跟和我同年紀的人在一起。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. 若有人對我不滿意，我會感到很不高興。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. 跟別人在一起給我一種很好的感覺。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. 結交朋友對我沒有特別困難。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. 我享受大部份我參與過的社交活動。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(VII. Family relations, OSIQ-R)

1. 我相信我的父母將來可以以我為榮。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. 我的父母總是站在別人我的兄弟姊妹的那一邊。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. 我的父母將來會對我失望。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. 我時常覺得我的父親一無是處。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. 了解我的父母是一件非常困難的事。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. 大部份時間我都可以信賴我的父母。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. 我的父母通常都可以相處得很好。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. 雖然我會因為父母對我嚴厲而感到憤怒，但我也相信他們是對的。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. 當我長大的時候自己組織的家庭，跟我現在的家會最少有部份方相似。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. 我覺得自己經常有份參與家中的決定。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. 我的父母對我通常都有耐性。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. 我的父母不能明白別人，因為他們自己有不愉快的童年。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. 我常常感到自己在家裡不受歡迎。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. 我比較喜歡父母中的其中一個。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. 我的父母以我為恥。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



(VIII. Rosenberg self-esteem scale)

請細讀以下項目，並就你個人的情況，按合適的程度評分 (✓)

	非常不同意	不同意	同意	非常同意
	1	2	3	4
1. 很多時候我認為自己一無是處。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. 我很多時覺得自己很無用。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. 我對於自己是抱有肯定態度。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. 我認為自己是個有價值的人, 至少基本上是與別人相等。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. 總括來說，我覺得我是一個失敗者。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. 我覺得我沒有甚麼值得驕傲。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. 我做事能力和大部份人一樣好。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. 總括而言，我很滿意自己。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. 我希望我能夠更看重自己。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. 我覺得我有很多好的特質。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(X. Academic Competency Scale)

請細讀以下項目，並 (✓) 選出最適合你的情況:。

	高 出 一 般 (1)	稍 高 出 一 般 (2)	稍 低 於 一 般 (3)	低 於 一 般 (4)
1. 我的學業成績比較起其他同級同學	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. 我對可以達到老師們的學術要求的自信	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. 我對自己的學業成績的滿意程度	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. 我父母對我的學業成績的滿意程度	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(XI. Centre of Epidemiology Scale of Depression)

請細讀以下項目，並 (✓) 選出最適合你的情況。

在過去一個月內，.....

	很少/ 全無	有時	時常	經常
1. 我被一些平常不會煩擾我的事情所煩擾。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. 我胃口欠佳，不想進食。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. 就算有家人或朋友的幫助，我也感到不能解除憂鬱。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. 我感到我不比別人差。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. 我做事不能集中精神。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. 我感到抑鬱沮喪。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. 我感到我做每件事都十分吃力。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. 我對未來充滿希望。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. 我認為我的一生很失敗。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. 我感到恐懼。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. 我不能安睡。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. 我是快樂的。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. 我比平常少說話。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. 我感到寂寞。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. 人們都是不友善的。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. 我享受生命。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. 我經常哭泣。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. 我感到不快。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. 我感到人們不喜歡我。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. 我停滯不前。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





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